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From local to global. Perceptions of environmental change in a 16th century Portuguese village. A micro approach to a macro-scenario

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HIGHLIGHTS

- Climatic changes in the Early Modern Age were felt and described by common people.
- Impacts of environmental change lead to contradictory interpretations.
- Environmental changes affected daily life and interfered with political decision.
- The global “Little Ice Age” had significant regional or even local variations.

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ABSTRACT

Historical perceptions, actions and reactions toward ecosystems are the central focus of this paper which aims also at a reflexion on how an early modern historian, facing evidence from a pre-statistical era, can debate environmental changes in coastal areas and the corresponding human response. The paper, focused on the case study of Vila do Conde (a Northern Portugal small coastal village highly involved in the Portuguese Overseas Expansion in the 16th century), will approach these questions by trying to discuss how micro-approaches can contribute to the understanding of the effects of global geo-climatic phenomena; how practical knowledge induced practical actions and how public perceptions were responsible for actions over ecosystems.

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1. Introduction

We take it as agreed that Environmental History deals with the study of the relationship, over time, between human agents and the environment, which results in changes in ecosystems (Hughes, 2001). Human actions towards the environment were induced, not only by economic and political purposes, but also by the social and public perceptions of natural phenomena. The assumption that environmental changes affect humans themselves and their social dynamics, in a reciprocal process, is a parallel postulation (Hughes, 2006; Lehmkuhl, 2007; McNeil, 2003; Sörlin and Warde, 2009). What we call “Environment” is thus seen as the result of complex correlations between “Nature”, as a complex ecological system, and historical dynamics, including the interference of Culture. The concept of Nurture (Goldhaber, 2012; Keller, 2010) embodies and theorizes this approach.

This kind of interaction became particularly clear in coastal areas during the Early Modern Period (1400–1800). The management

of natural resources, including marine species, remains the chief concern of recent approaches of marine environmental history (Holm et al., 2001, 2010; Starkey et al., 2007). One could argue that a maritime environmental history goes beyond this approach. Recent historiographical projects and multidisciplinary teams have also been researching, for instance, the impact of floods, typhoons, earthquakes and droughts on coastal communities (Suire, 2006). It is now time to focus additionally on another dimension and ask: how did past public policies and public powers react to, and interact with, environment and climate change? Which variables induced the governance of coastal areas and common anthropic actions in order to respond to those changes? This is, without doubt, a chief concern of our days.

Finally, yet importantly, even if environmental phenomena learn from a global analysis, since nature has no frontiers, the viability of a global environmental history is under debate (Radkau, 2008; White, 1999; Wiener, 2005). In fact, neither Global History nor World History can exist without interconnecting with local, regional and inter-regional scales. Accepting this rationale implies, therefore, that no historical phenomenon, even if on a worldwide

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and global scale, can be understood without observations on a local or regional base. It is at a local level that the effects of global phenomena are identified and can be studied (Polónia, 2015).

While true today, this statement also applies to the Early Modern Age. Evaluating, on a stable basis, long-term changes and environmental processes for the pre-statistical era depends, thus, on local enquiries and microanalyses, which facilitate macro-level approaches. Changes deriving from human behaviour have also to be understood as being stimulated by local constraints, experiences and challenges. Moreover, cultural settings are also determining factors when trying to understand attitudes with far-ranging projections on the environment.

Focusing on the Early Modern Period (1500–1800), the lack of suitable sources is the main drawback for any historian trying to approach these topics. This paper will focus on a local enquiry dating from the 1540s in order to see how the different respondents perceived a very specific phenomenon: the siltation of the Ave River and the river bar, which represented the access of Vila do Conde, a small Portuguese coastal village, to the sea.

The governance of the oceans is assumed as a key point on current and past debates on the sustainability of marine ecosystems. Those are part of the concerns, e.g., of the ISCH COST action “Oceans Past Platform (IS1403)” and “Ocean Governance for Sustainability – Challenges, Options and the Role of Science (CA 15217)”. Conversely, the governance of littoral areas, and its implications for the use of coastal resources and infrastructures are less represented in literature. Those are equally relevant for an understanding of how coastal communities and local powers dealt with environmental changes with direct impact on economic sustainability (Polónia, 2016), in a context in which responses lacked timely scientific or even empirical information required for the decision-making processes. Based on the argument that the power of the common people, of the socioeconomic agents in place and the strength of the self-organized mechanisms underpinning their actions were determinant factors in the relationship between men and nature (Polónia, 2012; Polónia and Pacheco, 2017), this paper seeks to enlighten the perceptions of the commoners towards the local expressions of global climatic and environmental changes, in the context of the First Global Age (1400–1800).

2. The centrality of coastal areas in the First Global Age – the Vila do Conde case study

Portuguese overseas expansion, and the building of a colonial empire, based on maritime dynamics, increased the importance of Portuguese seaports and maritime communities, giving new opportunities and introducing additional challenges, even to the small coastal villages. Studies on seaports ecosystems and impact evaluation of geo-climate changes induced on the geomorphology of seaports and coastal areas are therefore paramount (Figs. 1 and 2).

Heavily depending on the morphology and logistics of seaports, the overseas commercial enterprise demanded technical alterations to harbours, morphological transformations, and met environmental challenges that should have seriously affected short- and long term economic sustainability. Siltation of the bars' entrances and the traditional anchorage points are among them. Portuguese seaports did not meet major investments or complex technological interventions during the 16th and 17th centuries. Seaports constructions did not radically change harbour infrastructures, nor did the plans involve a new concept of public works. Even so, there were many small to medium-scale interventions. Difficulties of entrance into or exit from the harbour were the most common reason for promoting a public project on harbours or wharves. Siltation processes are mentioned most frequently as the reason for technical intervention. The need to protect the

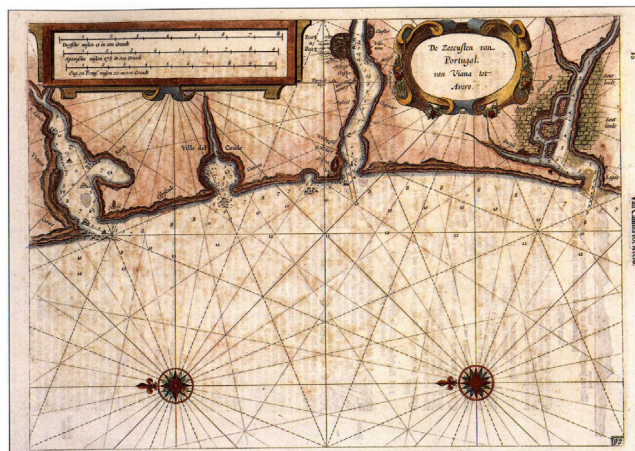


Fig. 1. North-western seaports. Cartographic representations. Source: Blaeu, Willem, 1638. *De Zee-cuten van Portugal van Viana tot Aveiro*. Amsterdam, Willem Jansz Blaeu. B.P.M.P.- C (1) – 2.



Fig. 2. North-western seaports. Cartographic representations. Source: Waghenaeer, Lucas Jansz, 1583. *Die Zee Caerte van Portugal tusschen Camino en Montego, alsoe dat landt all daer in Syin ghedaente...* Leyden, Christophe Plantin.

city from floods emerges as another frequent reason. All this is observable in Vila do Conde, a microcosm reflecting much more general tendencies (Fig. 3).

Vila do Conde, north of Porto, was a typical small maritime community. Between 1500 and 1640, it had between 3600 and 5000 inhabitants. Naval logistics and industries prevailed (shipbuilding, rope and sails industries), along with a significant merchant fleet (one of the most important in terms of transport capacity on a national level) and a specialized maritime community.

Municipal records for this extended 16th century reveal the perception of several imbalances ascribed to human activity: the overexploitation of fish resources; the pollution of the entrance of the bar by deposition of debris and ballast of ships are some of the reasons more frequently pointed out. In their explanatory memoranda, agents of the time attempted also to diagnose the reasons for silting processes, low water levels or drastic and uncontrolled floods which endangered the safety of people and goods. Interestingly enough, human actions were mostly held responsible for those phenomena, although periods of drought or heavy rain are also mentioned as likely causes (Polónia, 2007).

The concerns with the river mouth and the bar entrance were thus paramount at a time in which siltation processes and added

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